MAT065 FINAL EXAM REVIEW – FORM 2R

1. Solve for $M$: $F = \frac{MV + R}{K}$
2. Solve: $x^2 + 10x = 24$

3. Solve: $5(x - 3) - (x - 7) = 2(x + 1)$
4. Solve: $20x^2 - 12x = 0$

5. Factor Completely: $18y^2 - 50$
6. Multiply: $(2x - 3)(6x^2 - 5x - 4)$

7. Evaluate: $\frac{a^2 - 4b}{2c}$ if $a = -2$, $b = -3$, $c = -1$
8. Simplify: $\frac{6a^3b^7 - 15a^2b^3c + 9ab^5}{3ab^2}$

9. Check if $x = -2$ is a solution to the equation:
   $x^3 - 3x - 1 = 3x^2 + 5x - 5$
10. Combine: $\frac{3}{8} - \frac{7}{10x}$

11. Write in simplest radical form: $2\sqrt{9} + 3\sqrt{50} - \sqrt{32}$
12. Solve: $36m^2 = 25$

13. Evaluate: $\frac{-5 - 3^2}{-2} - 3(2 - 6)$
14. Simplify: $8x^3 - 3x(2x^2 - 3y) - 3y(4x)$

15. Factor Completely: $24x^5y^3 - 16x^7y^2 + 8x^2y^2$
16. Factor Completely: $4y^2 - 5y - 6$

17. State the slope, y-intercept and then sketch the graph for: $3x - 2y = 4$

18. Simplify completely: $\frac{5x^2 + 15x}{x^2 - 9}$
19. Simplify completely: $\left( \frac{22x^2y^8}{27x^6} \right) \left( \frac{-18xy}{55x^4y^3} \right)$

20. Solve Algebraically: $\frac{3x + 2y}{5x + 6y} = 7$
21. Solve: $\frac{x}{2} + \frac{3}{4} = \frac{5x}{12}$

22. Solve the inequality and sketch the solution on the number line: $-5 + 2x \geq 5x - 17$

23. Write an equation to represent the following problem, and then solve that equation:
   If ten times a number is increased by four, the result is twelve less than nine times the number.

24. Write the equation of a line through the points $(-1, -3)$ and $(1, -7)$ in slope-intercept form $(y = mx + b)$

25. Solve for $x$ in the given right triangle. Your solution must be in simplest radical form:

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ANSWERS TO MA065 FINAL EXAM REVIEW - FORM 2R

1. \( M = \frac{FK - R}{V} \)

2. \( x = -12, 2 \)

3. \( x = 5 \)

4. \( x = 0, \frac{3}{5} \)

5. \( 2(3y - 5)(3y + 5) \)

6. \( 12x^3 - 28x^2 + 7x + 12 \)

7. \(-8\)

8. \( 2a^2b^5 - 5abc + 3b^3 \)

9. Yes, since \(-3 = -3\)

10. \( \frac{15x - 28}{40x} \)

11. \( 6 + 11\sqrt{2} \)

12. \( x = \frac{5}{6}, x = -\frac{5}{6} \)

13. \( 19 \)

14. \( 2x^3 - 3xy \)

15. \( 8x^2y^2(3x^3y - 2x^5 + 1) \)

16. \( (4y + 3)(y - 2) \)

17. \( y = \frac{3}{2}x - 2 \) and Slope = \( \frac{3}{2} \), y-int = \( (0, -2) \)

18. \( \frac{5x}{x - 3} \)

19. \( -\frac{4y^6}{15x^7} \)

20. \( x = 5, y = -4 \)

21. \( x = -9 \)

22. \( x \leq 4 \)

23. \( 10x + 4 = 9x - 12, \) thus \( x = -16 \)

24. \( y = -2x - 5 \)

25. \( 2\sqrt{6} \)